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(4)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/113,216 07/10/98 AGAPIOU A 98U004

IM22/0225

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EXAMINER

DI VERDI, M

ART UNIT

PAPER NUMBER

1755

4

DATE MAILED:

02/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

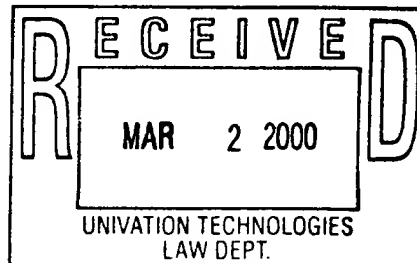
Commissioner of Patents and Trademarks

DATE DOCKETED

3/9/2000

By

RT



Office Action Summary

Application No.
09/113,216

Applicant(s)
Agaplos Kyriacos et al.

Examiner
Michael J. DiVerdi

Group Art Unit
1755



☒ Responsive to communication(s) filed on Jul 10, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-120 is/are pending in the application

Of the above, claim(s) 40-120 is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-39 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 3

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-39, drawn to a catalyst and a process of making such, classified in class 502, subclass 102.
 - II. Claims 40-120, drawn to a process of polymerizing an olefin, classified in class 526, subclass 108.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case a different catalyst can be used for polymerizing olefins.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. Jaimes Sher on January 11, 2000 a provisional election was made with traverse to prosecute the invention of group I, claims 1-39. Affirmation of this election must be made by applicant in replying to this Office action. Claims 40-120 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 9-11, 16, 17, 20, 21, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Funk *et al.* (U.S. Patent No. 5,034,481).

Funk *et al.* disclose a Ziegler olefin polymerization catalyst which incorporates a chromium alkyl salicylate. The weight percent of chromium alkyl salicylate to polymerization catalyst is 19%, and the catalyst and metal carboxylic acid salt are allowed to mix for 1 hour before polymerization. See column 4, Example, lines 50-68.

10. Claims 1, 2, 10, 11, 17, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Takebe *et al.* (U.S. Patent No. 3,919,185).

Takebe *et al.* disclose a Ziegler-Natta olefin polymerization catalytic system comprised of a $\text{TiCl}_3/\text{AlCl}_3$ solid, a triethylaluminum cocatalyst, and a chromium alkylsalicylate. See column 5, Example 1, lines 28-53.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinozaki *et al.* (EP 0 679 661) in view of Takebe *et al.* (U.S. Patent No. 3,919,185).

Shinozaki *et al.* disclose a conventional supported Ziegler-Natta type catalyst for olefin polymerization comprised of a titanium compound, magnesium compound, organoaluminum compound, and various electron donor compounds. See page 2, lines 49-57 and continued into page 3, lines 1-10, page 4, line 7 and line 48, page 5, lines 41-42, and page 11, line 44. See also page 7, lines 22-24 for examples of suitable carrier materials.

The titanium compound can either be of the formula $Ti(OR)_gX_{4-g}$ or be a bulky ligand metallocene ML_x type catalyst compound. See page 9, lines 19-58 and continued into page 10, lines 1-58. Within this description are bulky metallocene compounds where the two cyclopentadienyl rings are bridged.

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The weight percent of the organoaluminum compound to total weight of the polymerization catalyst is 17%. See page 20, Example 1, lines 31-33, and lines 37-38 for the relevant numbers used to calculate the 17%. This value is well within the ranges of claims 9, 16, 19, 26, 27, 31, and 34.

An additional component of the catalytic system is an activator in the form of hydrogen gas. See page 21, lines 10-12. Also during a prepolymerization, the titanium solid catalyst and organoaluminum compound were allowed to mix for 1 hour. See page 20, lines 35-40.

Shinozaki *et al.* fail to disclose an organoaluminum co-catalyst that is a carboxylate metal salt of the formula $MQ_x(OOCR)_y$, in particular they fail to disclose either aluminum mono-stearate, aluminum di-stearate, or aluminum tri-stearate. Takebe *et al.* teach that a Ziegler olefin polymerization catalyst can run longer and more continuously if a polyvalent metal salt of a carboxylic acid is added to the polymerization. Takebe *et al.* teach that suitable polyvalent metal carboxylic acid salts include those of aluminum and higher fatty acids, which stearic acid is considered to be. See column 3, lines 39-44. Using the Ziegler-Natta system of Shinozaki *et al.* with the polyvalent metal carboxylic acid salt of Takebe *et al.* would give a weight ratio of metal carboxylic acid salt to titanium of approximately 18 which is within the 1 to 100 range of claim 35.

It would have been obvious to one ordinarily skilled in the art of Ziegler-Natta olefin polymerizations to use the system of Shinozaki *et al.* as modified by Takebe *et al.* by adding an aluminum stearate salt to the polymerization process. The motivation would have been a

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polymer that does not adhere to the reactor allowing longer, more continuous operations and providing higher productivity and more stable operating conditions as stated by Takebe *et al.*

See column 1, lines 51-57.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. DiVerdi whose telephone number is (703) 305-0213. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 5:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703)305-3823. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.


Michael J. DiVerdi


KARL GROUP
PRIMARY EXAMINER
GROUP 1755

February 16, 2000